

Description

[ENLARGED PAINT ROLLER]

BACKGROUND OF INVENTION

[0001] This invention relates to paint rollers which accommodate roller assemblies in a yoke frame. The curved frame includes end arms which extend downwardly from the yoke frame at each end to engage frame arms which include elements protruding inwardly from each end. Plastic bearings are mounted over the protruding elements which also serve as end caps for the roller.

[0002] In the prior art, the roller connection or bearing was rather small compared to the present invention and included a narrow surface about which the roller rotated. Consequently, when considerable pressure was placed upon the roller, the roller was forced out of the bearings and the roller fell down from the frame. This could cause considerable damage or inconvenience when the roller was wet with paint. Applicant is proposing an invention wherein the roller will withstand severe forces applied thereto without becoming dislodged while painting takes

place. This is very important particularly when using enlarged rollers of 12 inches or more which require the application greater force against a surface.

[0003] In the prior art, the roller bearing comprised a flange on an upwardly protruding plastic cylinder and a narrow end cap which engaged the flange surface. When considerable axial pressure was applied to the roller handle, the roller fell outwardly from the bearings. This problem is eliminated with the present invention wherein a protruding end bearing element extends outwardly from the frame arm to positively engage an aperture in a large roller cap. A typical wire frame and cage assembly is shown in U.S. Patent 5,345,648 to Graves.

SUMMARY OF INVENTION

[0004] This invention relates to an enlarged paint roller assembly which includes a curved yoke frame having a central recess with a threaded insert for a handle and a downwardly curved frame portion on each side of the recess. The frame portions each terminate in an end arm having downwardly extending resilient prongs. The prongs each engage the apertures in a frame arm which includes an upper recessed portion with side apertures corresponding to the prongs. The resiliently biased prongs spring out-

wardly to become locked in the apertures. A lower portion of the frame arm comprises a cylindrical portion having a two-step protrusion extending inwardly to engage a roller end cap. The enlarged roller is mounted between opposing protrusions. The frame portions are substantially inflexible as pressure is applied to the handle and the protrusions provide a positive engagement with apertures in the roller cap to prevent disengagement of the roller.

[0005] Accordingly, an object of this invention is to provide a new and improved enlarged paint roller which includes a yoke frame having a frame arm with a protruding bearing surface to be engaged by an end cap on a paint roller and is capable of withstanding greater forces without the roller becoming dislodged.

[0006] Another object of this invention is to provide a new and improved enlarged paint roller of 12 inches or more which withstands high pressures applied to the handle for applying all kinds of paint and coatings particularly heavy bodied coatings.

[0007] A more specific object of this invention is to provide a new and improved enlarged paint roller frame which includes a curved bracket or frame with an intermediate threaded insert for connection to a handle and a down-

wardly extending frame arm at each end of the bracket having end members coupled thereto, to removably engage respective frame arms which include inwardly protruding portions to engage the end caps in a roller.

[0008] A further object of this invention is to provide a new and improved large paint roller which includes a central recess on a curved yoke frame for connection to a handle, curving frame portions on both sides of the central recess terminating in end members having downwardly extending prongs to resiliently engage a frame arm having protrusions extending inwardly to engage the end caps on a roller.

BRIEF DESCRIPTION OF DRAWINGS

[0009] The above and other objects and advantages of this invention may be more clearly seen when viewed in conjunction with the accompanying drawings wherein.

[0010] FIG. 1 is an exploded perspective view of the invention with only one of the frame arms shown for purposes of illustration.

[0011] FIG. 2 is a cross-sectional view of the yoke frame taken along the line 2-2 of FIG. 1.

[0012] FIG. 3 is a view of the frame arm end cap and roller; and.

[0013] FIG. 4a and 4b depict the roller end cap in an end view and side view respectively.

DETAILED DESCRIPTION

[0014] Referring now to the FIG. 1 of the drawings, the invention comprises a paint roller assembly 10 which may extend up to eighteen inches or more in length. The roller assembly includes a curved yoke frame 11 with a central substantially cylindrical intermediate portion 12 having an upper recess 13 which accommodates a threaded insert 14. The insert 14 is mounted within the recess 13 with epoxy cement. A handle (not shown) is threaded into the recess 15 to use the roller assembly 10 for painting purposes.

[0015] The yoke frame 11 comprises downwardly curved frame portions 16a, 16b on each side of the cylindrical center portion 12. The frame portions 16a, 16b have a narrow rounded upper surface 50 and outwardly curving concave walls 25 which slope downwardly to an enlarged base 35. This design provides considerable strength to the frame 11 and permits increased forces to be applied to the roller 40. The frame members 16a, 16b terminate at integrally molded end arms 17a, 17b which include upper portions 18a, 18b and downwardly extending opposing prongs

19a, 19b, and 19c, 19d which are separated from the main portion of the arms 18a, 18b by narrow slots 46.

[0016] The prongs 19a–d are resilient and include a recess 45a–d and outwardly extending protrusions 20a, 20b and 20c, 20d which engage respective apertures 21a, 21b and 21c, 21d in the frame arms 22a, 22b. The frame arms 22a, 22b snap onto the prongs 20a, 20b and 20c and 20d respectively to form a unitary structure. The apertures 21a, 21b, and 21c, 21d in the arms 22a and 22b are substantially rectangular in configuration along the curved wall 51. The upper arm portion 47a and 47b include a recess 55a, 55b into which the prongs 19a–c are inserted.

[0017] The frame arms 22a, 22b include an upper substantially rectangular portion 47a, 47b with transverse wall apertures 21a, 21b, 21c, and 21d which engage the downwardly extending prong protrusions 20a–d in said apertures. A lower downwardly extending lower portion 51 includes a larger cylindrical protrusion 29a, 29b extending transversely inward and protrusion or bearing 31a, 31b at the end thereof which is smaller in diameter but longer.

[0018] The end protrusions 31a, 31b (see FIG. 3) engage respective apertures 32a, 32b in the roller end caps 30a, 30b. The end caps 30a, 30b include an end surface 33a, 33b

with the apertures 32a, 32b and a main body 34a, 34b terminating in outwardly extending flexible prongs 35a, 35b. The end caps 30a, 30b are force fitted into respectively apertures 36a, 36b in the roller 40.

[0019] Since the end protrusions 31a, 31b are longer and more secure in the caps 30a, 30b than conventional designs, the roller assembly 10 can withstand up to three times the pressure of conventional assemblies without the roller 40 becoming dislodged. The curved yoke 50 also assists in that pressure forces are not diverted perpendicular to the yoke. With large rollers 40, eighteen inches or greater, greater pressure is applied to the roller 40 with the handle in order to cover a surface with paint from the roller 40. The present invention makes larger rollers feasible so that a greater surface may be covered with each movement of the roller.

[0020] In operation, a handle (not shown) is threaded into the aperture 15. The frame arm inserts 22a, 22b are then snapped onto the end arms 17a, 17b with the prongs 19a-d locking the inserts 22a, 22b within apertures 21a-21d. An end cap 30a, 30b is inserted into the opening 36a, 36b of roller 40 and held therein by flexible prongs 35a, 35b. The protruding bearing 31a, 31b is then

inserted into the apertures 32a, 32b in the end caps 30a, 30b. The enlarged roller 40 which may be eighteen inches in length or even greater is now ready for painting. The roller may have been considerable force applied thereto without becoming loose or falling out of the yoke 11.

[0021] While the invention has been explained by a detailed description of certain specific embodiments, it is understood that various modifications and substitutions can be made in any of them within the scope of the appended claims which are intended also to include equivalents of such embodiments.